

DILLIDUR IMPACT

Wear resistant steel

Material data sheet, edition October 2023¹

DILLIDUR IMPACT is a wear resistant steel with a nominal hardness of 340 HBW in delivery condition.

DILLIDUR IMPACT is not a constructional steel CE-certified according to EN 10025.

DILLIDUR IMPACT is applied where high resistance to abrasion is required together with high toughness and crack resistance and a good workability.

Examples of application are heavy (welded) wear parts in earth moving, mining, demolition and recycling equipment.

In spite of their high tensile properties, DILLIDUR steels are not intended for safety relevant components. For this purpose, high strength steels DILLIMAX are available.

Product description

Designation and range of application

The production range of DILLIDUR IMPACT plates is 40 mm to 150 mm (1.6 in. to 6 in.)², please see delivery program. Other dimensions may be possible on request.

Chemical composition

For the chemical composition of the ladle analysis the following maximum values are applicable (in %):

C	Si	Mn	P	S	Ni + Cu	Mo	Cr	V	Nb	B
0.21	0.60	1.80	0.020	0.005	3.00	0.70	1.50	0.09	0.04	0.005

Maximum values of carbon equivalent:

Plate thickness t [mm]	40 mm ≤ t ≤ 80 mm	80 mm < t ≤ 150 mm
CEV ^a	0.66	0.74
CET ^b	0.40	0.43

^a $CEV = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$

^b $CET = C + (Mn + Mo)/10 + (Cr + Cu)/20 + Ni/40$

The steel is fully killed and fine grained through sufficient aluminium content.

¹ The current version of this material data sheet can be also found on www.dillinger.de.

² The approximately converted values in brackets are for information only.

Delivery condition

The plates are controlled water quenched and tempered.

Mechanical properties in the delivery condition

Hardness

Brinell surface hardness at room temperature: 310 – 370 HBW

Impact test on Charpy-V-specimen in longitudinal direction at ¼ plate thickness

Plate Thickness t [mm]	Test Temperature [°C]	Impact energy KV ₂ [J]
40 ≤ t ≤ 150 (1.6 in. ≤ t ≤ 6 in.) ^a	-40 (-40 °F) ^a	30 (22 ft.lb.) ^a

^a The approximately converted values in brackets are for information only.

The specified minimum value is the average of 3 tests. One individual value may be below the minimum average value specified, provided that it is not less than 70 % of that value.

Testing

Brinell hardness testing acc. to EN ISO 6506-01 or Leeb hardness testing acc. to EN ISO 16859-01 on a ground surface in general 0.5 mm - 2.0 mm below the sheet surface.

The impact tests are performed according to EN 10045-1 on Charpy-V test specimen taken in longitudinal direction at ¼ plate thickness.

Brinell surface hardness tested once per heat and 40 t (metric tons).

Charpy tests are carried out once per heat.

Unless otherwise agreed, the test results are documented in an inspection certificate 3.1 in accordance with EN 10204.

Identification of plates

Unless otherwise agreed, the marking is carried out with low stress steel stamps with at least the following information:

- steel grade (DILLIDUR IMPACT)
- heat number
- number of mother plate and individual plate
- the manufacturer's symbol
- authorized inspection representative's sign

Processing

The entire processing and application techniques are of fundamental importance to the reliability of the products made from this steel. The user should ensure that his design, construction and processing methods are aligned with the material, correspond to the state of the art that the fabricator has to comply with and are suitable for the intended use. The customer is responsible for the selection of the material. The recommendations in accordance with EN 1011-2 (Welding) and CEN/TR 10347 (Forming) as well as recommendations regarding job safety in accordance with national rules should be observed while considering the higher strength and hardenability.

The steel can be heated to about 500 °C (932 °F) without any substantial drop in hardness.

For further processing recommendations, please refer to the corresponding processing information.

General technical delivery requirements

Unless otherwise agreed, the general technical requirements in accordance with EN 10021 are applicable.

Tolerances

Unless otherwise agreed, tolerances are in accordance with EN 10029 class A for the thickness and table 4, steel group H for the maximum flatness deviation.

Surface quality

Unless otherwise agreed, the surface will be in accordance with EN 10163-2, class A2.

General note

If special requirements, which are not covered in this specification, are to be met by the steel due to its intended use or processing, these requirements are to be agreed before placing the order.

The information in this data sheet is a product description. This data sheet is updated at irregular intervals.

The current version is relevant. The latest version is available from the mill or as download at www.dillinger.de.

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